

REMARKS

The Examiner noted that claims 1, 3-8, and 10-20 are pending in the application. The Examiner also indicated that claims 1, 3-8, and 10-18 are in condition for allowance and that claims 19-20 stand rejected.

In addition, new claim 21, which depends from claim 19 and includes a feature similar to a feature of claim 1, has been added. Because this feature is similar to a feature already present in allowed claim 1, entry and allowance of the new claim is respectfully requested.

Accordingly, claims 1, 3-8, and 10-21 are pending. The rejections are traversed below, and reconsideration of all claims is respectfully requested.

Information Disclosure Statement

An Information Disclosure Statement was filed on January 26, 2005. However, an initialed and signed copy of the PTO-1449 did not accompany the March 24, 2005 Office Action. Accordingly, Applicant respectfully requests that the Examiner provide Applicant with an initialed and signed form PTO-1449 to confirm consideration of the references cited in the Information Disclosure Statement.

Rejection of Claims Under 35 U.S.C. § 103(a)

In items 1-2 on page 2 of the Office Action, the Examiner rejected claims 19-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,983,520 issued to Kim et al. (hereinafter referred to as "Kim"), in view of U.S. Patent 6,742,284 issued to Dinh. The rejection is respectfully traversed.

In response to point 6 of the Office Action, it is respectfully submitted that Kim taken alone, or in combination with Dinh, does not disclose, teach or suggest at least "A drying mode method of a drum washing machine, the method comprising: . . . recovering heat from the high temperature humid air through at least one heat pipe," as recited in claim 19.

The Office Action asserts that Kim's discharge duct 22 and condensation duct 23 (Figure 5) form a heat recovery system (page 2, point 3 of the Office Action). In addition, page 3, line 1 of the Office Action notes, "Kim does not show a heat pipe recovery."

In addition, Dinh discloses a tobacco dryer 10 (Figure 1) in a tobacco curing and drying system, and does not disclose, teach, or suggest at least "a drum washing machine."

Further, Kim and Dinh also do not disclose, teach, or suggest at least, "the heat is

recovered from the high temperature humid air through at least one heat pipe before the air reaches a condensing nozzle,” as recited in new claim 21. Instead, Kim applies water through a condensation water supply valve into condensation duct 23, which does not have a heat pipe. Therefore, Kim can not disclose the feature of claim 21. In addition, Dinh does not disclose this feature.

Moreover, Kim and Dinh also do not disclose, teach or suggest at least, “a clothes-drying unit including a plurality of pipes, wherein the pipes recover, during a drying-mode operation of the drum washing machine, heat from high temperature humid air after the high temperature humid air comes out of a water tub,” as recited in claim 20. As discussed above, the Office Action notes that “Kim does not show a heat pipe recovery” (page 3, line 1 of the Office Action). Moreover, Dinh does not disclose a “clothes drying unit,” a “drum washing machine,” or a “water tub.”

The Office Action asserts, “The patent to Dinh clearly shows a heat pipe recovery system 12 same as the applicant’s (page 3, last line – page 4, first line.” The Office Action further asserts that the motivation to combine Dinh and Kim is energy conservation.

However, it is respectfully submitted that there would not have been motivation to combine Kim with Dinh to provide the features of the present invention. Kim discloses a magnetron 12 installed by a support bracket 11 fixed to an end extended from a driving shaft 5 to produce microwaves. The microwaves are guided by an antenna 16 connected to the magnetron 12, so that the microwaves are supplied to the interior of a washing tub 4 through a hollow portion of drive shaft 5 (column 4, line 45 - column 5, line 17 of Kim).

Dinh discloses a tobacco curing and drying system for removing the moisture from freshly harvested tobacco leaves located in a tobacco barn. For example, col. 3, lines 24-26 of Dinh states, “As shown in FIG. 1, tobacco dryer 10 using heat recovery heat pipe 12 is built around furnace 14 and connected to barn 16.” Dinh does not disclose, teach or suggest a drum washing machine, or the application of heat recovery pipe 12 to a drum washing machine.

Instead, Col. 3, lines 3-8 of Dinh states, “The present invention offers a more economical, as well as a more healthy way to cure and dry tobacco. Although specifically designed for tobacco, it is contemplated that the principles taught herein can also be applied to dry other products, including a wide variety of agricultural and food products.” Accordingly, Dinh is not directed toward any type of process for drying clothing. Instead, Dinh is directed toward drying agricultural products as part of a manufacturing process.

The Office Action indicates that the proffered combination would have been obvious "to recover waste heat and save energy" (point 3 of the Office Action). It is respectfully submitted that this proffered motivation fails to support a *prima facie* obviousness case.

To set forth a *prima facie* §103 rejection, there must be some objective **evidenced** reason for modifying a reference. Specifically, there must be evidence outside the present application, which motivates, leads, or suggests to one of ordinary skill to modify a reference (MPEP § 2141). It is respectfully submitted that there would not have been motivation to combine Kim's microwave dryer for a washing machine with Dinh's tobacco curing and drying system for drying tobacco leaves in a barn.

MPEP § 2142 states that "when the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the Examiner to explain why the combination of the teachings is proper."

Here, the Examiner simply stated, with no evidence to support the assertion, that one having ordinary skill in the art at the time of the invention would be motivated to combine a microwave dryer for a washing machine for washing laundry (Kim) with a pipe in a tobacco curing and drying system (Dinh). It is respectfully submitted that this does not speak to the motivation for combining the two references. The Examiner is required to present actual evidence and make particular findings related to the motivation to combine the teaching of the references.

Accordingly, for at least these reasons, it is respectfully submitted that claims 19-21 patentably distinguishes over the cited references. In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Dembiczak, 50 USPQ2d 1614, 1617 (Fed Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." Dembiczak, 50 USPQ2d at 1617. "The factual inquiry whether to combine the references must be thorough and searching." In re Lee 61 USPQ2d 1430, 1433 (Fed Cir. 2002) (citing McGinley v. Franklin Sports, Inc., 60 USPQ2d 1001, 1008 (Fed Cir. 2001)). The factual inquiry must be based on objective evidence of record, and cannot be based on subjective belief and unknown authority. Id. at 1433-34. The Examiner must explain the reasons that one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious. In re Rouffet, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

Therefore, for at least the reasons presented above, it is respectfully submitted that there would not have been motivation to combine Kim with Dinh.

Therefore, for at least the above reasons, it is respectfully submitted that claims 19-21 are patentably distinguishable over the cited references.

In Item 3 on pages 2-3 of the Office Action, the Examiner rejected claims 19-20 under 35 U.S.C. § 103 as being unpatentable over Kim in view of U.S. Patent 6,497,107 issued to Maisotsenko et al. (hereinafter referred to as "Maisotsenko"). This rejection is respectfully traversed.

The Office Action substitutes Maisotsenko for Dinh and asserts that Maisotsenko's heat pipe recovery system 69 illustrates the claimed heat pipe.

It is respectfully submitted that Kim taken alone, or in combination with Maisotsenko, does not disclose, teach or suggest at least "A drying-mode method of a drum washing machine, the method comprising: . . . recovering heat from the high temperature humid air through at least one heat pipe" as recited in claim 19.

The Office Action asserts that Kim's discharge duct 22 and condensation duct 23 (Figure 5) form a heat recovery system (page 2, point 3 of the Office Action). In addition, page 3, line 1 of the Office Action notes, "Kim does not show a heat pipe recovery."

In addition, Maisotsenko's heat pipes 69 are for a cooling system for a vehicle as shown in Figures 10-15. Maisotsenko does not disclose, teach, or suggest a "drum washing machine."

Further, Kim and Maisotsenko also do not disclose, teach, or suggest at least, "the heat is recovered from the high temperature humid air through at least one heat pipe before the air reaches a condensing nozzle," as recited in new claim 21. Instead, Kim applies water through a condensation water supply valve into condensation duct 23, which does not have a heat pipe. Therefore, Kim can not disclose the feature of claim 21. In addition, Maisotsenko does not disclose this feature.

Moreover, Kim and Maisotsenko also do not disclose, teach or suggest at least, "a clothes-drying unit including a plurality of pipes, wherein the pipes recover, during a drying – mode operation of the drum washing machine, heat from high temperature humid air after the high temperature humid air comes out of a water tub," as recited in claim 20. As discussed above, the Office Action notes that "Kim does not show a heat pipe recovery" (page 3, line 1 of the Office Action). Moreover, Maisotsenko does not disclose a "clothes drying unit," a "drum washing machine," or a "water tub."

The Office Action further asserts that the motivation to combine Dinh and Kim is energy conservation. It is respectfully submitted that there is no motivation to combine the two

references.

Kim discloses a microwave dryer for a washing machine, which uses a magnetron 12 to provide microwaves to a washing tub 4 to heat laundry. Maisotsenko provides heat pipes 69 for a cooling system for a vehicle. Maisotsenko does not disclose, teach or suggest a “drum washing machine,” a “clothes-drying unit,” or a “water tub.”

Moreover, as discussed above, to set forth a *prima facie* § 103 rejection, there must be some objective **evidenced** reason for modifying a reference. Specifically, there must be evidence, outside of the present application, which motivates, leads, or suggests to one of ordinary skill to modify a reference (MPEP § 2141). It is respectfully submitted that there would not have been motivation to combine a pipe from a cooling system for a vehicle as taught by Maisotsenko with the microwave dryer as taught by Kim.

Therefore, for at least the above reasons, it is respectfully submitted that claims 19-21 patentably distinguish over the cited references.

Summary

Claims 1, 3-8 and 10-21 are pending and under consideration. It is respectfully submitted that none of the references taken alone or in combination disclose the present claimed invention. There being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

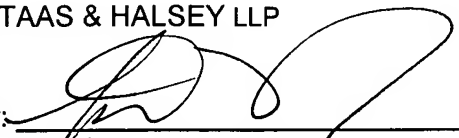
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned and tend to these matters.

If there are any additional fees associated with filing of this amendment, please charge the same to Deposit Account No. 19-3935.

Respectfully submitted,

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